

FIG 1A

AAV-1	ttgcccaactccctctcgcgctcgctcggtgggcctgcggacc	aaagg	tccgc	60		
AAV-2	...g.....	ac..a....	g.gc.....	gc.		
AAV-6	...g.....	ac..a....	g.gc.....	gc.		
		Rep binding site				
AAV-1	agacggcagagctctgctctggccccc	caccg	agcgagcgagcgc	gagaggagtg		
AAV-2	c....c.c.g...t...c.g.g....t..gt.....					
AAV-6	c....c.c.g...t...c.g.g....t..gt.....					
		TRS				
AAV-1	ggcaactccatca	cttagggtaa	TCGCGAAGCGCCTCCCACGCTGCCGCGTCAGCGCTGA	180		
AAV-2	.c.....	--.ct.G..G.....	TG.A...G-----	163		
AAV-6	.c.....	--.ct.G..G.....	TG.A...G-----	163		
		E box/USF				
AAV-1	CGTAAATTACGTCA	AGGG--	GAGTGGCCTGTATTAGCT	GTCA	CAGTGAGTGCTTTGC	237
AAV-2	...G.....	TTA.G.A.....	AG.....	-	-	222
AAV-6	...G.....	TTA.G.A.....	AG.....	-	-	222
		YY1	P5/TATA			
AAV-1	GACATTTGCGACACCACGTGGCCATTAGGGTATATATGGCC	GAGTGAGCGAGCAGGAT				297
AAV-2	.....T...T..CGCT.....T..A.C.....AC.....G.					282
AAV-6	.....T...T..CGCT.....T..A.C.....AC.....G.					282
		YY1/p5 RNA	Rep 78/68			
AAV-1	CTCCATTTGAC-CGCGAAATTGAACGAGCAGCAGCCAT	GC	CGGGCTTCTACGAGATCG			356
AAV-2	.....AG..G..GG.....C.....C.....G..T.....T.					342
AAV-6	.....AG..G..GG.....C.....C.....G..T.....T.					341
		AAV-1	TGATCAAGGTGCCGAGCGACCTGGACGAGCAC	CTGCCGGCATTTCTGACTCGTTGTGA		416
AAV-2	.....T.....C..C.....T.....G..T.....C.....AGC.....					402
AAV-6	.....T.....C..C.....T.....T.....C.....AGC.....					401
		AAV-1	GCTGGGTGCCGAGAAGGAATGGAGCTGCCCGGATTCTGAC	ATGGATCTGAATCTGA		476
AAV-2	A.....T.....G..A.....					462
AAV-6	A.....T.....G..A.....					461
		AAV-1	TTGAGCAGGCACCCCTGACCGTGGCGAGAAGCTGCAGCGC	ACTTCCTGGTCCAATGGC		536
AAV-2	.....	.....T...ACGG.....				522
AAV-6	.....	.....G....				521
		AAV-1	GCCGCGTGAGTAAGGCCCGGAGGCCCTCTCTTGTCAG	TGAGAAGGGCGAGTCCT		596
AAV-2	....T.....T.....G..A..T.....A..AG..					582
AAV-6	....T.....T.....G..A..T.....A..AG..					581
		AAV-1	ACTTCCACCTCCATATTCTGGTGGAGACCACGGGGTCAA	ATCCATGGTGCTGGCCGCT		656
AAV-2	.....A.G..CG.G..C.....A.....C.....G.....TT.....A..T..					642
AAV-6	.....					641
		AAV-1	TCCTGAGTCAGATTAGGGACAAGCTGGTGCAGACC	ATCTACCGCGGGATCGAGCCGACCC		716
AAV-2	.....C.C..A..A..A.T.....GA..T.....					702
AAV-6	.....					701
		AAV-1	TGCCCAACTGGTTCGCGGTGACCAAGACGCGTA	ATGGCGCCGGAGGGGGAAACAAGGTGG		776
AAV-2	....A.....C..A.....CA.A.....C.....					762
AAV-6	....					761

FIG 1B

AAV-1	TGGACGAGTGCTACATCCCCA	ACTACCTCCTGCCCAAGACTCAGCCC	GAGCTGCAGTGGG	836		
AAV-2	.....T.....	T...T.G..C.....A..C.....T.....C.....		822	
AAV-6	.....	.....		821
		P19/TATA	P19 RNA			
AAV-1	CGTGGACTAACATGGAGGAGT	ATATAAGCGCCTGTTGAACCTGGCGAGCG	AAACGGC	896		
AAV-2	.....T.....AC.....T.....	C.....G..T..CA.G.....T.....		882	
AAV-6	.....C.....GG.....A.....	G.....A..C..GG.C.....		881	
AAV-1	TCGTGGCGCAGCACCTGACCCAC	GTCAAGCCAGACCAGGAGCAGAACAA	AGGAGAATCTGA	956		
AAV-2	.G.....T.....G.....	GTCG.....G.....A.....A..		942		
AAV-6	.....CG.....	.....		941
		Rep 52/40				
AAV-1	ACCCCAATTCTGACGCGC	GTCTCATCCGGTCAAAAAC	CTCCGCGC	GCTACATGGAGCTGG	1016	
AAV-2	.T.....T.....G..G..A.A.....	T..A..CA.G.....		1002		
AAV-6	.....	A.....		1001	
AAV-1	TCGGGTGGCTGGTGGACCGGGG	CATCACCTCCGAGAACAGTGGATCCAGGAGGACCAGG	1076			
AAV-2	.....C.....AA..G..T.....G.....	.....		1062
AAV-6	.....	.....		1061
AAV-1	CCTCGTACATCTCCTCAACG	CCGCTTCAA	CTCGGTCCCAGATCAAGGCC	GCTCTGG	1136	
AAV-2	....A.....T..G..C.....	.....A.....T..CT...		1122
AAV-6	.....	.....		1121
AAV-1	ACAATGCCGGCAAGATCATGG	GCGCTGACCAAATCCGCGCCGACTAC	CTGGTAGGCC	CCG	1196	
AAV-2	.....G..A.....T..AGC.....T..A..C.....	.....G....AGC		1182
AAV-6	.....	.....		1181
AAV-1	CTCCGCCCGGGACATTAAA	ACCAACCGC	ATCTACCGC	ATCCTGGAGCTGAACGGCTACG	1256	
AAV-2	AG..CGT.G.A.....TCC.G...T..G..T..TAAA..TT.....A..A.....G....	.....T.....		1242	
AAV-6	.....C.....	.....		1241
AAV-1	AACCTGCCTACGCCGGCTCCG	TCTTCTCGGCTGGGCC	CAGAAAAGGTTGGAAAGCGCA	1316		
AAV-2	.T..CCAA..T..G..CT.....	G..A.....AC.....A.....C..A.G.		1302		
AAV-6	C.....	.....		1301	
AAV-1	ACACCATCTGGCTGTTGGGCC	GGCAACACGGCAAGACCA	ACATCGGAAAGCC	ATCG	1376	
AAV-2	.....T..A..T..C..G.....	.....G.....A.		1362
AAV-6	.....	.....		1361
AAV-1	CCCACGCCGTGCC	CTTCTACGGCTGCGTCA	ACTGGACCAATGAGAA	CTTCC	CTTAATG	1436
AAV-2A.T.....G.....A.....C.		1422	
AAV-6C.		1421	
AAV-1	ATTGCGTCGACAAGATGGT	ATCTGGTGGAGGAGGGCAAGATGAC	GGCCAAGGTC	GTGG	1496	
AAV-2	.C..T.....	.....G.....C.....		1482	
AAV-6	.....	.....		1481
AAV-1	AGTCCGCCAAGGCC	ATTCTCGGCGG	CAGCAAGGTGCGCGTGGAC	AAAAGTGC	AAAGTCGT	1556
AAV-2G.....A.....A..A.....G..A.....G..A.....C.		1542	
AAV-6		1541	
AAV-1	CCGCCAGATCGACCC	ACCCCCACCCCGT	GATCGTCACCTCC	AAACACCAACATGTG	CGCCGTGA	1616
AAV-2	.G.....A.....G..T.....		1602	
AAV-6T.....		1601	

FIG 1C

AAV-1 TTGACGGAACAGCACCTCGAGCACCAGCAGCCGTTGCAGGACCGGATGTTCAAAT 1676
 AAV-2 TCA.. G..... A..... A..... 1662
 AAV-6

AAV-1 TTGAACTCACCCGCCGTCTGGAGCATGACTTGGCAAGGTGACAAAGCAGGAAGTCAAAG 1740
 AAV-2 T..... G..... C.. C..... 1722
 AAV-6

AAV-1 AGTTCTCCGCTGGCGCAGGATCACGTGACCGAGGTGGCGCATGAGTTCTACGTCAAGAA 1796
 AAV-2 .C.. T..... G..... AA..... GTT..... A..... A..... A..... 1782
 AAV-6

P40/TATA

AAV-1 AGGGTGGAGCCAACAAAAGACCCGCCCGATGACGCGGATAAAAGCGAGCCAAAGCGGG 1856
 AAV-2 G..... AG..... A.... T... T..... A..... 1842
 AAV-6

P40 RNA

AAV-1 CCTGCCCTCAGTCGCGGATCCATCGACGTACAGCGGAAAGGAGCTCCGGTGGACTTG 1916
 AAV-2 TGC.. GAG..... T... C.G..... ---.. T.. A.CA... AC. 1899
 AAV-6

▼

AAV-1 CCGACAGGTACCAAAACAAATGTTCTCGTCACGCGGGCATGCTCAGATGCTGTTCCCT 1976
 AAV-2 .A..... T..... AA.. T..... 1959
 AAV-6

AAV-1 GCAAGACATGCGAGAGAAATGAATCAGAACATTCAACATTGCTTCACGCACGGGACGAGAG 2036
 AAV-2 ...GACA..... CA.. T.. C..... T..... ACA.. A.. 2019
 AAV-6A..... C.... 2021

AAV-1 ACTGTTAGAGTGCTTCCCCGGCGTGTCAAGATCTCAACCGGT---GTCAGAAAGAGGA 2093
 AAV-2 T..... T... ---..... C.. TTCT... GTC.. A.A.G 2076
 AAV-6 A.. T..... 2078

AAV-1 CGTATCGGAAACTCTGTGCCATTCATCATCTGCTGGGGCGGGCTCCGAGATTGCTTGCT 2153
 AAV-2 A..... G.. CTA..... A.CA... AAA.. TG.. A... ---C..... A 2133
 AAV-6

Rep 78 stop

AAV-1 CGGCCTGCGATCTGGTCAACGTGGACCTGGATGACTGTGTTCTGAGCAATAATGACTT 2213
 AAV-2 .T..... T..... TT..... CA.C.T... A..... T.. 2193
 AAV-6

Rep 68 stop

▼ VP1

AAV-1 AAACCAGGTATGGCTGCCGATGGTTATCTTCCAGATTGGCTCGAGGACACCTCTTGAG 2273
 AAV-2 ...T..... CT..... A..... 2253
 AAV-6

AAV-1 GGCATTGCGAGTGGTGGGACTTGAAACCTGGAGCCCCGAAGCCAAAGCCAACCAGCAA 2333
 AAV-2 ..A.. AA.AC..... A.GC.C..... CC.A.. ACCA.. A.. GC.. GCAG... GG 2313
 AAV-6

AAV-1 AAGCAGGACGACGGCCGGGTCTGGTGCTCCTGGCTACAAGTACCTCGGACCCCTAAC 2393
 AAV-2 C.TA..... A.. A..... T..... G..... 2373
 AAV-6 G.. C..... G..... C..... 2378

FIG 1D

AAV-1 GGACTCGACAAGGGGGAGCCCGTCAACGCGGCGACGCAGCGGCCCTCGAGCACGACAAG 2453
 AAV-2A.....G.....A.....A.....C.....A 2433
 AAV-6T..... 2438

AAV-1 GCCTACGACCAGCAGCTCAAAGCGGGTGACAATCCGTACCTGCGGTATAACCACGCCGAC 2513
 AAV-2G.....G.CAGC..A.....C.....CAA..C..... 2493
 AAV-6A.AGCG..T.....T.....GCG..T..... 2498

AAV-1 GCCGAGTTTCAGGAGCGTCTGCAAGAAGATAACGTCTTTGGGGCAACCTCGGGCGAGCA 2573
 AAV-2 ..G.....C..TA.....A.....G..... 2553
 AAV-6 ..C.....T..GC.....A.....G..... 2558

AAV-1 GTCTTCAGGCCAAGAACGGGTTCTCGAACCTCTCGGTCTGGTTGAGGAAGGCGCTAAG 2633
 AAV-2G..A...A.....T.....G..C.....CCT..T.... 2613
 AAV-6A.....T.T.....T..... 2618

VP2
 AAV-1 ACGGCTCCTGGAAAGAACGTCCGGTAGAGCAGTCGCCACAAGAGCCAGACTCCTCCTCG 2693
 AAV-2G.....A..GA.G.....C..T..TGTG..... 2673
 AAV-6T.....G..AC.T.....G..G..ACAA..... 2678

AAV-1 GGCATCGGCAAGACAGGCCAGCAGCCGCTAAAAGAGACTCAATTGGTCAGACTGGC 2753
 AAV-2 ..A.C..A...G.G.....T..A.G..A..T.G.....A 2733
 AAV-6T..... 2738

AAV-1 GACTCAGAGTCAGTCCCCGATCCACAACCTCTCGGAGAACCTCCAGCAACCCCGCTGCT 2813
 AAV-2 ...G...C....A..T..C..C..G.....C.G..A.....G.....T..G. 2793
 AAV-6 ...T....G....C..C..C..A..A.....G..A..T.....A.....G..... 2798

VP3
 AAV-1 GTGGGACCTACTACAATGGCTTCAGGCGGTGGCGACCAATGGCAGACAATAACGAAGGC 2873
 AAV-2 C.....A...A...G.....A.....A.....G... 2853
 AAV-6 2858

AAV-1 GCCGACGGAGTGGTAATGCCCTCAGGAAATTGGCATTGCGATTCCACATGGCTGGCGAC 2933
 AAV-2T....C.....A..... 2913
 AAV-6 2918

AAV-1 AGAGTCATCACCAACCAGCACCCGACCTGGGCCTGCCACCTACAATAACCACCTCTAC 2993
 AAV-2A.....C.....C..... 2973
 AAV-6A..A.....T..C..... 2978

AAV-1 AAGCAAATCTCCAGTGCTCAACGGGGCCAGCAACGACAACCAACTACTCGGCTACAGC 3053
 AAV-2 ..A.....T.....CCAA.....A..TCG.....T.....T..... 3030
 AAV-6 3038

AAV-1 ACCCCCTGGGGTATTTGATTCAACAGATTCCACTGCCACTTTACCACGTGACTGG 3113
 AAV-2T.....C.....T.....C..... 3090
 AAV-6 3098

AAV-1 CAGCGACTCATCAACAACAATTGGGGATTCCGGCCCAAGAGACTCAACTCAAACCTCTTC 3173
 AAV-2 ..AA.....C.....A.....G.....T 3150
 AAV-6 3158

AAV-1 AACATCCAAGTCAAGGAGGTACAGACGAATGATGGCGTCACAACCACGCTAATAACCTT 3233
 AAV-2T.....A.....CA.....C..TACG..G..G..T..C..... 3210
 AAV-6G..... 3218

FIG 1E

AAV-1	ACCAGCACGGTTCAAGTCTTCGGACTCGGAGTACCGAGCTCCGTACGTCCCGCTCT	3293
AAV-2	.....G..G..TA.T.....C.....G.....	3270
AAV-6	.....T.G.....	3278
AAV-1	GCGCACCAAGGGCTGCCTCCCTCCGTTCCGGCGGACGTGTTCATGATTCCGCAATACGGC	3353
AAV-2	.....T..A..A.....G.....A..A.....C.....G.G..A..G..T..A	3330
AAV-6	.....G.....	3338
AAV-1	TACCTGACGCTCAACAATGGCAGCCAAGCCGTGGGACGTTCATCCTTTACTGCCTGGAA	3413
AAV-2	.....C..C..G.....C..G..T..G..A..A.....C..T..A.....G	3390
AAV-6	.....G..A.....G.....	3398
AAV-1	TATTCCTTCTCAGATGCTGAGAACGGCAACAACTTACCTCAGCTACACCTTGAG	3473
AAV-2	..C..T.....C.T..C..A.....T.....T.....C..	3450
AAV-6	.....A..G.....T.....C..	3458
AAV-1	GAAGTGCCTTCCACAGCAGCTACGCGCACAGCCAGAGCCTGGACCGGCTGATGAATCCT	3533
AAV-2	..C..T.....T.....T.....T.....T..C.....	3510
AAV-6	..C.....	3498
AAV-1	CTCATCGACCAATACTGTATTACCTGAACAGAACTCAAATCAGTCCGAAAGTGCCAA	3593
AAV-2	.....G.....T...G.....AA..C..C..CAAGT....CCA..ACG	3570
AAV-6	.....G.....G.....	3578
AAV-1	AACAAGGACTTGCTGTTAGCCGTGGGTCTCCAGCTGGCATGTTAGCCCAAAAAC	3653
AAV-2	C..GTCAAGGC..T..A....TCT..AG..CCGGAG..GAG..A...TCGG.AC...T..T..GG...	3630
AAV-6	.....G.....	3638
AAV-1	TGGCTACCTGGACCCTGTTATCGGCAGCGCGTTCTAAAACAAAAACAGACAACAAAC	3713
AAV-2	.....T.....C..C.....A..A..CA..G...TCTG..G..T.....	3690
AAV-6	.....C.....	3698
AAV-1	AACAGCAATTACCTGGACTGGTGTCTAAAATATAACCTCAATGGCGTGAATCCATC	3773
AAV-2	.....TG..A..ACT..G.....A..A..C..G..CC.....CA..A..C..TC..G	3750
AAV-6	.....C.....T.....T..A	3758
AAV-1	ATCAACCTGGCACTGCTATGGCCTCACACAAAGACGACGAAGACAAGTTCTTCCATG	3833
AAV-2	G..G..T..G..GC..C..C.....AAGC.....G.....T.....A.....T.....TCA.	3810
AAV-6	.....A.....	3818
AAV-1	AGCGGTGTCAATTGGAAAAGAGAGCGCCGGAGCTCAAACACTGCATTGGACAAT	3893
AAV-2	.....G..TC..C..C.....G..GC..AG..T..A..AGAAAA...TGTGAACA..T..A..G	3870
AAV-6	.....G.....	3878
AAV-1	GTCATGATTACAGACGAAGAGGAAATTAAAGCCACTAACCTGTGGCCACCGAAAGATT	3953
AAV-2	.....CGG..A..A..C..T..C.....T..G..GCAG..A.	3930
AAV-6	.....C.....C.....	3938
AAV-1	GGGACCGTGGCAGTCAATTCCAGAGCAGCACAGACCCCTGCGACCGGAGATGTGCAT	4013
AAV-2	..TT..T..AT..TAC..CC.....AG..A..G..C..AG..A..T..C.....CA..C	3990
AAV-6	.....T.....C.....	3998
AAV-1	GCTATGGGAGCATTACCTGGCATGGTGTGGCAAGATAGAGACGTGTACCTGCAGGGTCCC	4073
AAV-2	A..ACAA..C..TTC..T..A.....C.....G..C.....T.....T.....G..	4050
AAV-6	T.....C.....A.....C.....A.....T	4058

FIG 1F

AAV-1	ATTTGGGCCAAAATTCTCACACAGATGGACACTTCACCCGTCTCCTCTTATGGCGGC	4133
AAV-2	..C.....A..G.....A.....G..C.....T.....C.....C..C.....T..A	4110
AAV-6	.....G.....	4118
AAV-1	TTTGGACTCAAGAACCCGCCTCCTCAGATCCTCATAAAAACACGCCTGTTCTGCGAAT	4193
AAV-2	..C.....T..AC....T.....A.....T.....G.....C..G..A.....	4170
AAV-6	.....T..C.....	4178
AAV-1	CCTCCGGCGGAGTTCTAGCTACAAAGTTGCTTCATTCATCACCCAATACTCCACAGGA	4253
AAV-2	...T..A.CACC..CAGT..GG.....C.....A..G.....G...	4230
AAV-6	.....A.....G.....G..T.....	4238
AAV-1	CA-AGTGAGTGTGGAAATTGAATGGGAGCTGCAGAAAGAAAACAGCAAGCGCTGGAATCC	4312
AAV-2	..CG..C..C.....G..C..G.....G.....A.....	4290
AAV-6	..-.....C.....G.....A.....	4297
AAV-1	CGAAGTGCAGTACACATCCAATTATGCCAA-CTGCCAA-CGTTGATTACTGTGGACA	4371
AAV-2	....A.T.....T.....C..CAAC..G.....TT..T..G..C.....C.....T.	4350
AAV-6	.....T.....T..C.....-.....C.....	4356
AAV-1	ACAATGGACTTATACTGAGCCTGCCCATGGCACCGTTACCTTACCGTCCCCTGT	4431
AAV-2	CT.....CG.G...T.A.....A.A.....G..T...AAT.....C.....	4410
AAV-6	.....	4416
	<u>VP1-3 stop PolyA signal</u>	
AAV-1	AATTACGTGTTAATCAATAAACCGGTTGATTGTTCAAGTTGAACTTGGTCTCCTGTCC	4491
	.....TGCGTA	
AAV-2	....G.T.....T..A.....	4470
AAV-6	....GT.....A.....G.....A....G	4476
AAV-1	TTCTTATCTTATC-GGTTACCATGGTTAT-AGTTACACATTA--ACTGCTTGGTTGCGC	4547
AAV-2	..TC.T.....TA...T.....C..CGTAGA..AGT..GC..TGG..G.G..AA..CATTA	4530
AAV-6	..A.....T..C.....A..CA..C-C.G.....-.....A.....	4533
AAV-1	TTCGCGATAAAAGACTTACGTACGGGttacccctagtgtggagttggcccactccctc	4607
AAV-2	ACTA.A..gg.a-----g.....	4570
AAV-6	.....at-----	4572
	"	
AAV-1	tctgcgcgctcgctcgctcggtggggccggcagagcagagcgtctgcgcgtcgccgacctt	4667
AAV-2	.c.....ac..a.....gc..c..a..g..gc...a..gc..c..gg...	4630
AAV-6	..a.....g.....	4632
AAV-1	tggtccgcaggccccaccgagcgagcgagcgagagagggagtggcaa	4718
AAV-2	..cc..g..gc....t..gt.....c...	4681
AAV-6	.....t.....	4683

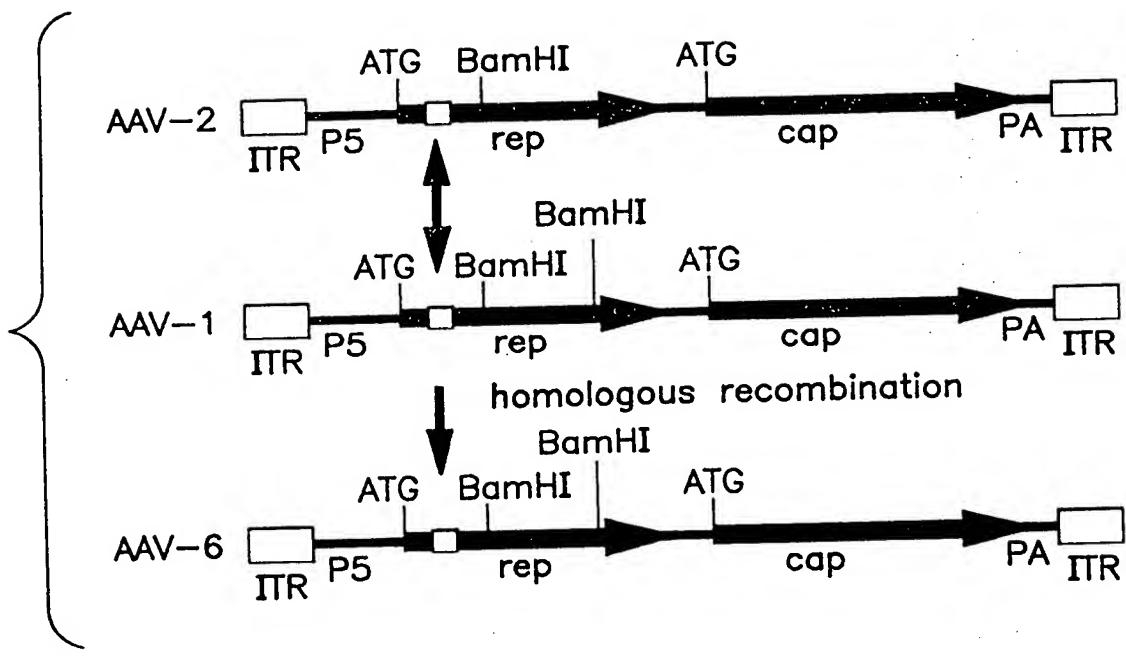


FIG. 3A

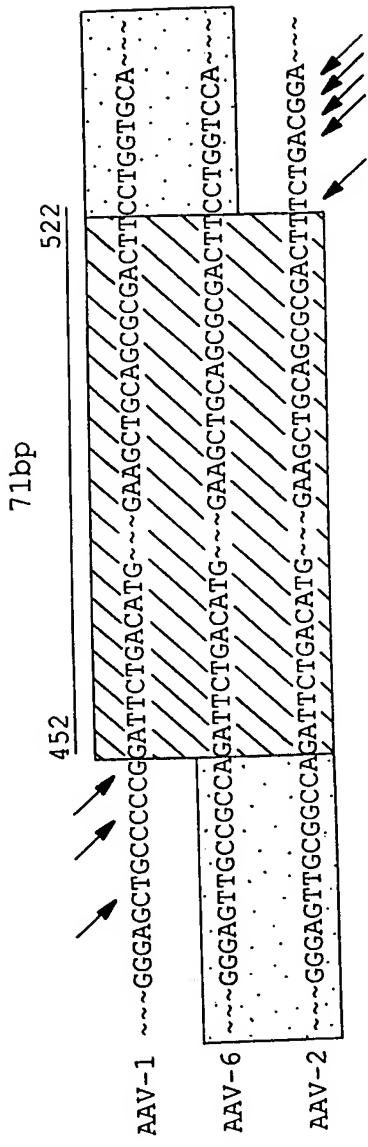


FIG. 3B

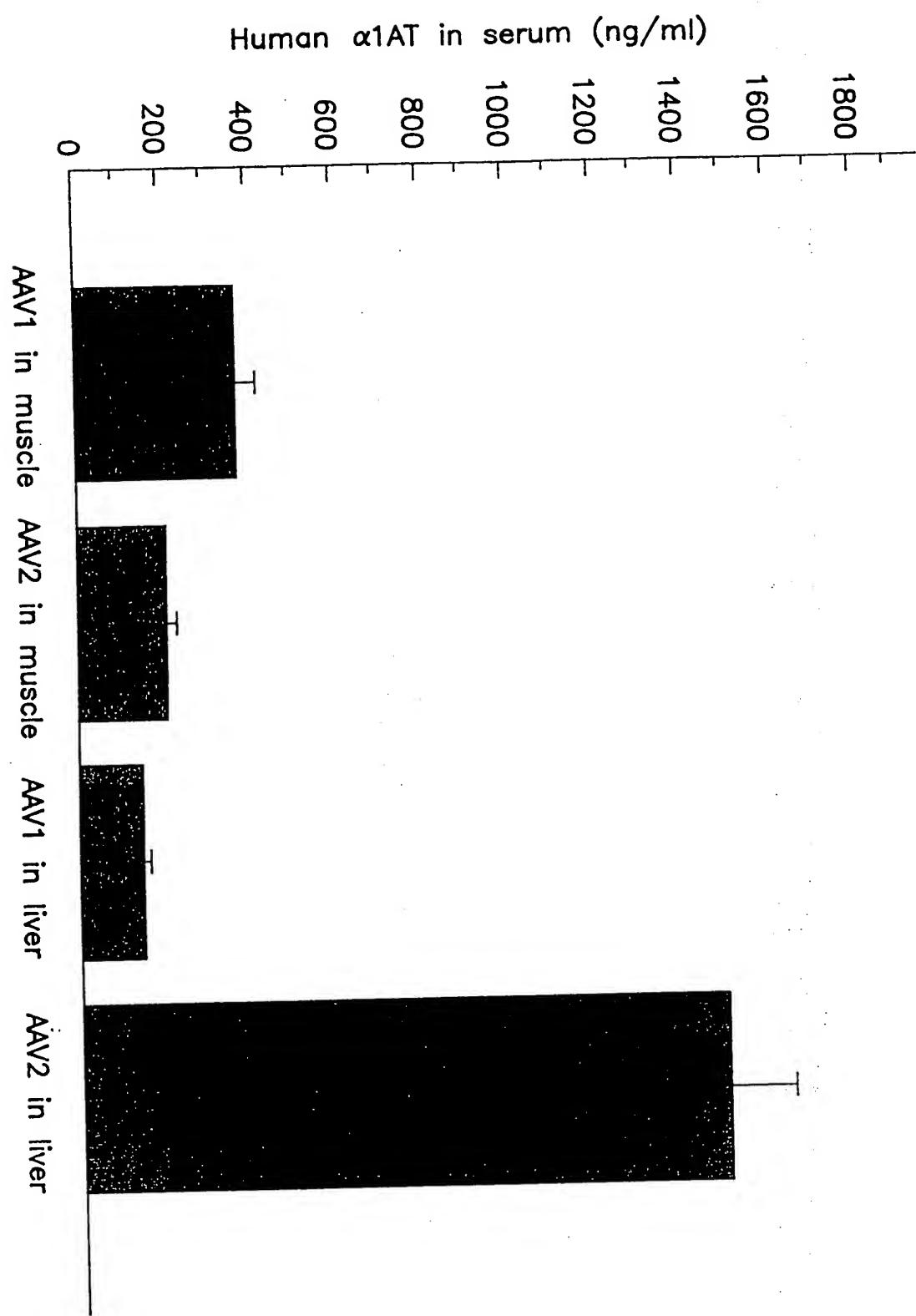


FIG. 4A

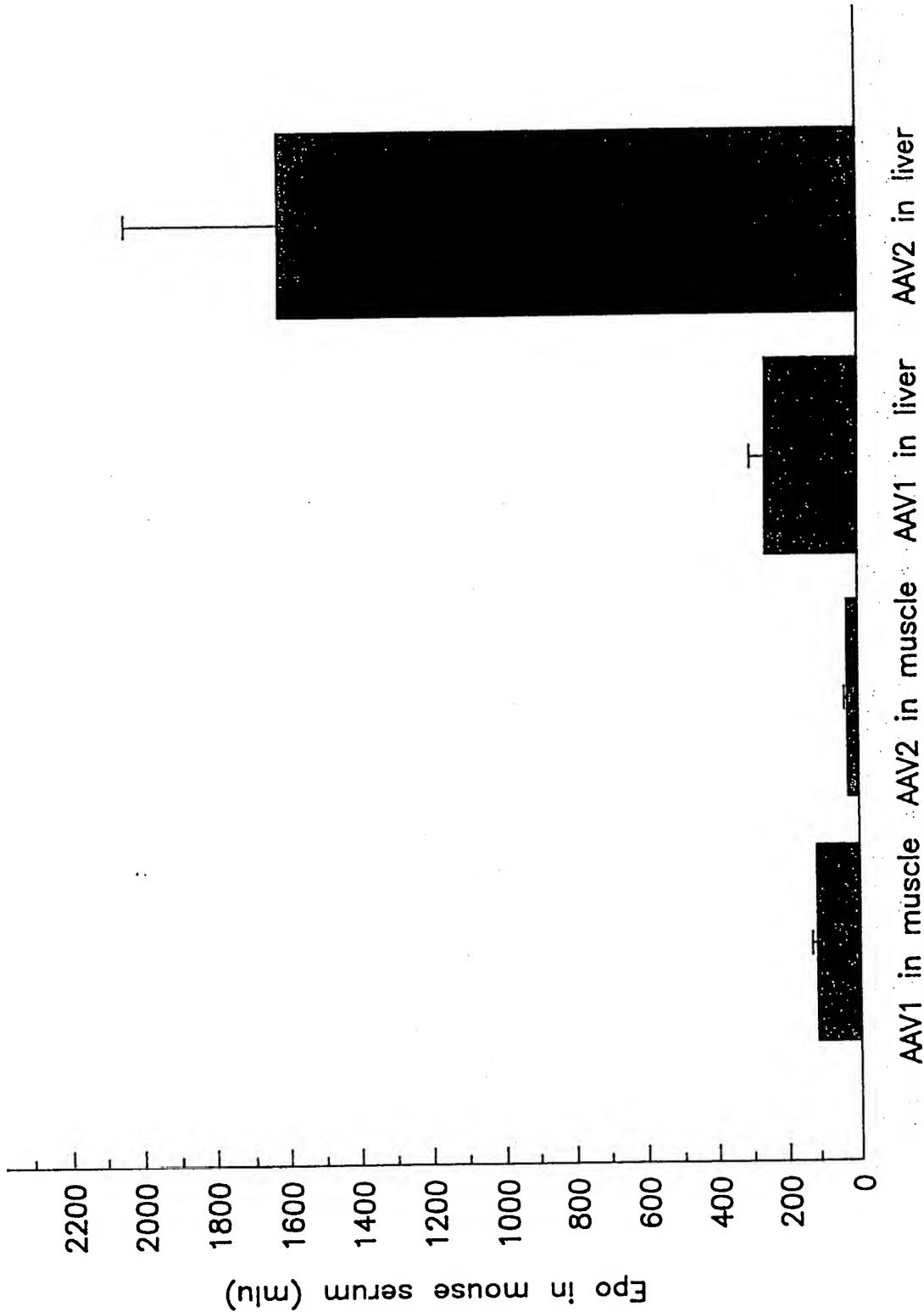


FIG. 4B

FIG. 5A

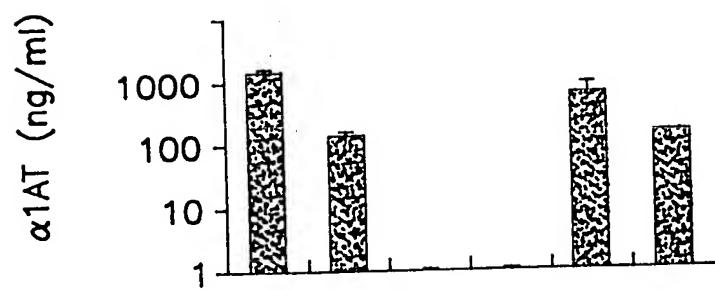


FIG. 5B

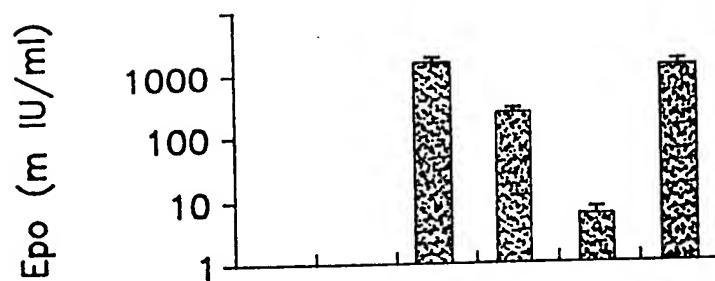


FIG. 5C

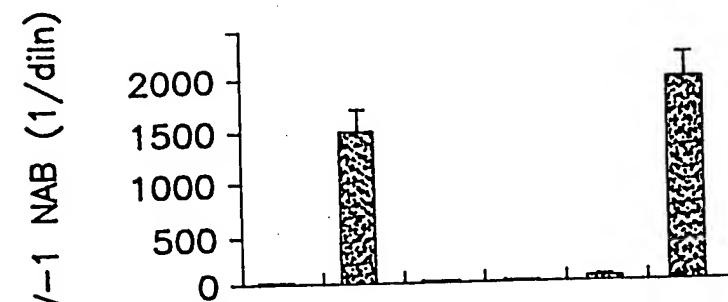
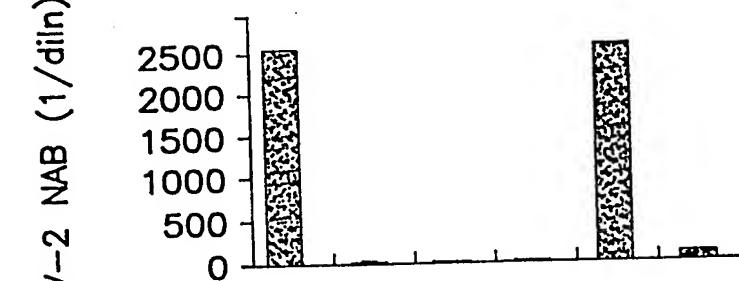


FIG. 5D



Group	1	2	3	4	5	6
Vector1 - $\alpha 1AT$	AAV2	AAV1	PBS	PBS	AAV2	AAV1
Vector2 - EPO	AAV2	AAV1	AAV2	AAV1	AAV1	AAV2

FIG. 6A

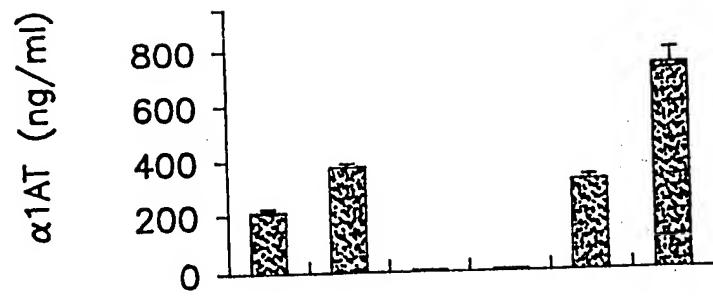


FIG. 6B

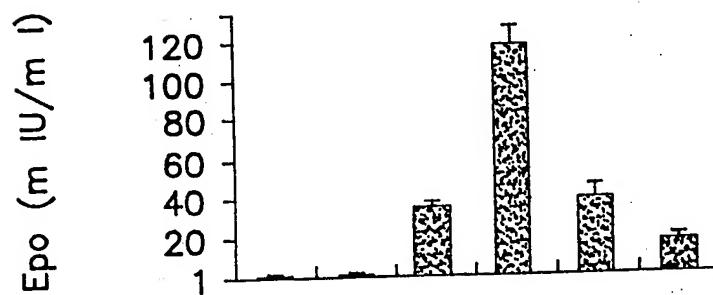


FIG. 6C

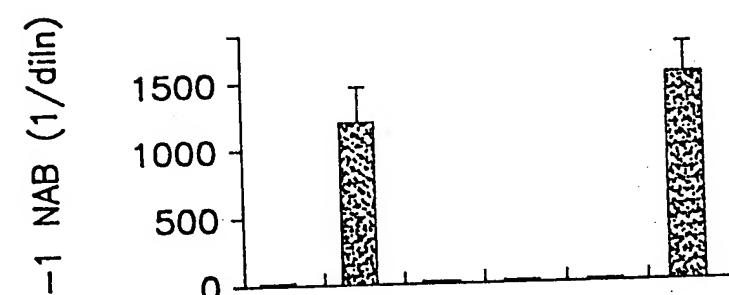
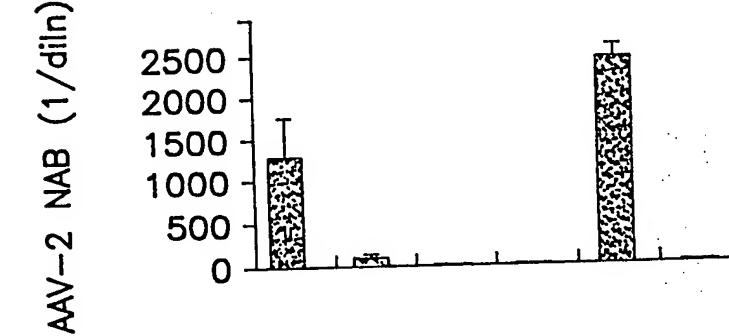


FIG. 6D



Group	1	2	3	4	5	6
Vector1- $\alpha 1\text{AT}$	AAV2	AAV1	PBS	PBS	AAV2	AAV1
Vector2-EPO	AAV2	AAV1	AAV2	AAV1	AAV1	AAV2

AAV-1 TR

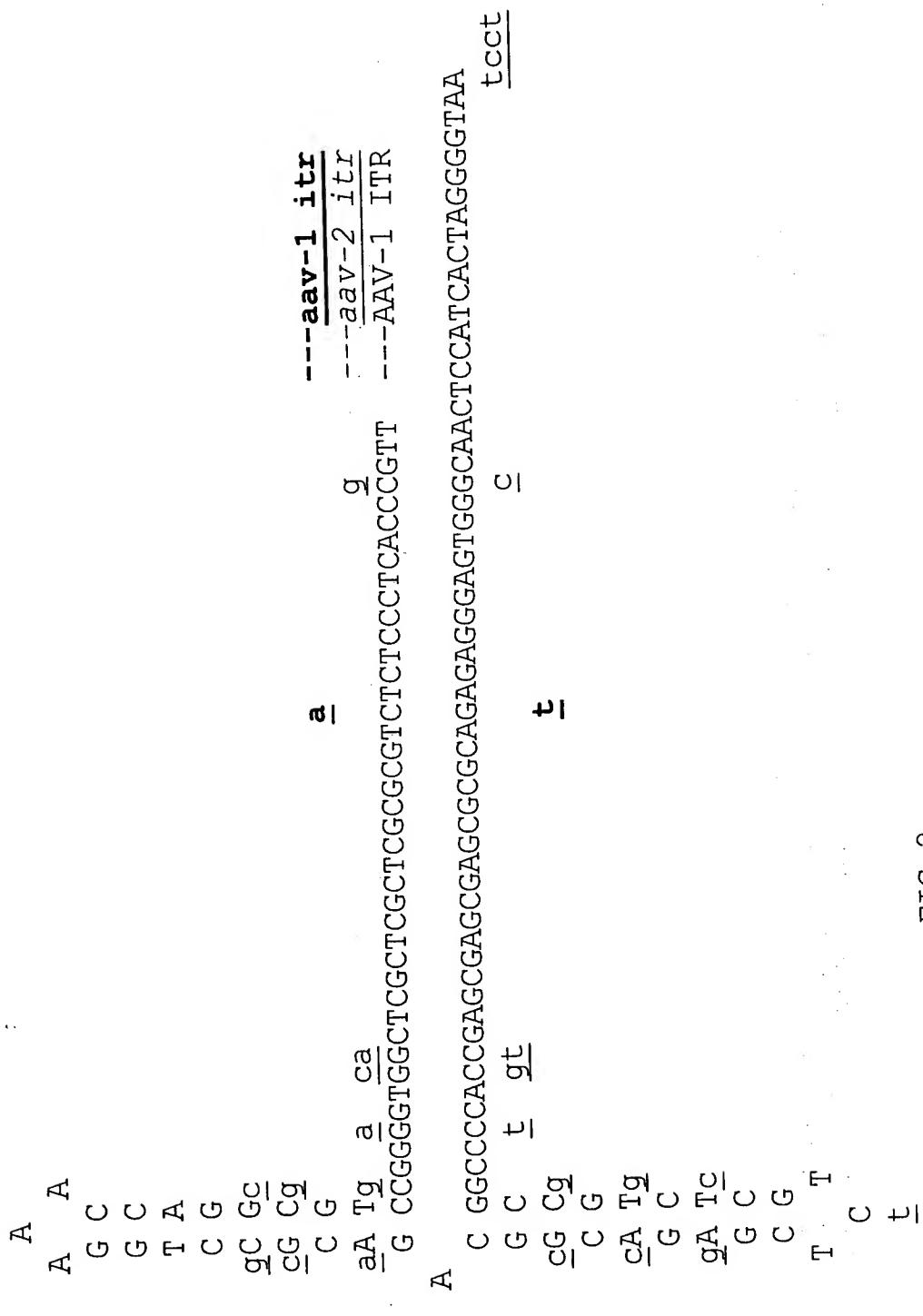


FIG 2